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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HARRISON, CHANTE E

ART UNIT PAPER NUMBER

2672

DATE MAILED: 05/05/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/835,004

Applicant(s)

FREYHULT, PETER

Examiner

Chante Harrison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to communications: RCE and Amendment B, filed on 3/18/04.

2. Claims 30-50 are pending in the case. Claims 30, 38 and 45 are independent claims. Claims 1-29 have been canceled. Claims 30-50 are new.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 30-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Vittorio Castelli et al., U.S. Patent 6,326,965, 12/2001.

As per independent claim 30, Castelli discloses receiving an element of the picture for storing in one of the plurality of levels of image data (col. 5, ll. 33-35, 44-48), identifying a subpicture in a lowest one of the plurality of levels in which the received element may be placed (col. 1-2, ll. 65-5; col. 6, ll. 18-22; Fig. 6), wherein the lowest level represents a lowest resolution of image data (i.e. each level having differing frequency

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decomposition, representative of differing resolutions, with the lowest level "603" having the most frequency decompositions) (Fig. 6), and wherein each subpicture stores a predetermined maximum amount of elements (col. 5, ll. 44-48); placing the received element in the identified subpicture (col. 5, ll. 50-55), determining if a number of elements in the identified subpicture exceeds the predetermined maximum (col. 5, ll. 50-55; col. 6, ll. 2-37); and if the number of elements in the identified subpicture exceeds the predetermined maximum, identifying a number of overlapping subpictures, in a higher one of the plurality of levels, into which the received element may be placed (col. 6, ll. 2-12, wherein the higher level represents a higher resolution of image data than the lowest level (i.e. each level having differing frequency decomposition, representative of differing resolutions, with the highest level "609" having the least frequency decompositions) (Fig. 6), and wherein the subpicture in the higher level is capable of storing a larger number of elements than the subpicture in the lowest level (i.e. the higher level "609" having larger predetermined amount of data than the lower level "603") (Fig. 6; col. 6, ll. 3-12, 30-37).

As per dependent claims 31 and 47, Castelli discloses determining if a number of elements in the identified subpicture of the higher level exceeds the predetermined maximum (col. 6, ll. 2-12); and if the number of elements in the identified subpicture of the higher level exceeds the predetermined maximum, identifying a number of overlapping supictures, in a next higher one of the plurality of levels, into which the

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received element may be placed, when the next higher level represents a higher resolution of image data than the higher level (col. 6, ll. 16-37; Fig. 7).

As per dependent claims 32 and 48, Castelli discloses if the number of overlapping subpictures is zero (Fig. 7 "711"), redefining the subpictures of the picture (col. 5, ll. 48-65).

As per dependent claims 33 and 49, Castelli discloses receiving a new element of the picture for storing in one of the plurality of levels of image data (i.e. new elements are sent from the server to the client where the elements are stored hierarchically at relative depth levels in the element data structure) (col. 7, ll. 20-25; col. 5, ll. 26-32); and repeating the step of identifying, placing and determining for the new element of the picture (col. 5, ll. 60-65).

As per dependent claim 34, Castelli discloses loading the identified subpicture prior to placing the received element in the identified subpicture (col. 5, ll. 3-5, 33-35).

As per dependent claim 35, Castelli discloses sorting a list of overlapping subpictures (i.e. sorting the data to be hierarchically represented/stored in the database) (col. 5, ll. 15-25, 44-46); and examining an overlapping element in the list (col. 5, ll. 50-55).

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As per dependent claim 36, Castelli discloses adding the overlapping subpicture to an instantiation list (i.e. feeding the elements into a synthesis engine) (col. 5, ll. 48-51); and instantiating the overlapping subpictures from the instantiation list (col. 5, ll. 51-55).

As per dependent claims 37, 44 and 50, Castelli discloses the picture comprises an image with three-dimensional data (col. 1, ll. 19-24). Castelli inherently discloses 3D data in that he teaches retrieving and processing multi-dimensional data, which is inclusive of three-dimensional data.

As per independent claim 38, Castelli discloses at least one extent defining a dataset position in a coordinate space by defining a coordinate position and a size in coordinate directions around the coordinate position (i.e. stored lattice point data and metadata associated with view elements where a view element is described spatially) (col. 5, ll. 5-12); at least one element defining a set of data belonging to the picture and having a common extent (col. 6, ll. 18-22); a plurality of subpictures defining a portion of the picture, each subpicture capable of storing a predetermined maximum amount of data (i.e. nodes storing associated view elements) (col. 5, ll. 44-48); and a plurality of levels arranged in a stacked relationship (Fig. 6), each level having a different resolution and a different number of subpictures (i.e. each level having differing spatial coverage, representative the number of view elements, and differing frequency decomposition, representative of differing resolutions) (Fig. 6), wherein a subpicture in a higher level of the plurality of levels is capable of storing a larger predetermined maximum amount of data than a subpicture in a lower level of the plurality of levels (i.e. the higher level "609"

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having larger predetermined amount of data than the lower level "603") (Fig. 6; col. 6, ll. 3-12, 30-37).

As per dependent claim 39, Castelli discloses a lowest one of the plurality of levels has a lower resolution level and fewer subpictures than a higher one of the plurality of levels (i.e. level 603 is at a lower resolution and has fewer subpictures than level 609, which is at a higher resolution) (Fig. 6)

As per dependent claim 40, Castelli discloses a level of the plurality of levels represents the picture in its entirety (col. 9-10, ll. 65-1).

As per dependent claim 41, Castelli discloses a lowest one of the plurality of levels includes one subpicture representing the picture in its entirety (Fig. 6 "603").

As per dependent claim 42, Castelli discloses a higher one of the plurality of levels includes a plurality of subpictures having a higher resolution than the lowest level (Fig. 6 "609").

As per dependent claim 43, Castelli discloses the plurality of levels comprises four levels (Fig. 6). Castelli inherently discloses four levels in that he teaches a multi-dimensional lattice, which has four levels.

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As per independent claim 45, Castelli discloses a processor (col. 4, ll. 40-45), and memory having computer software code stored therein (col. 4, ll. 52-61), the processor and the memory being capable of performing the method as claimed in claim 30.

Therefore the rationale applied in the rejection of claim 30 applies herein.

As per dependent claim 46, Castelli discloses a display for displaying the picture (Fig. 4 "400").

Response to Arguments

3. Applicant's arguments filed 3/18/04 have been fully considered but they are not persuasive.

Applicant argues, with respect to independent claims 30 and 45, Castelli not teach identifying a subpicture in a lowest one of the plurality of levels in which the received element may be placed.

In reply, Castelli teaches user selection of a view request that results in the identification of elements required for creation of the view; and placement of those elements in a view/subpicture at a particular hierarchical position/level through a compression scheme performing the spatial synthesis and frequency decomposition of the elements.

Applicant argues, with respect to claims 30 and 45, Castelli does not necessarily teach placing the received element in the identified subpicture.

In reply, as Castelli specifically teaches identifying the level in which the received element may be placed, Castelli teaches placing the received element in the identified subpicture.

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Applicant argues, with respect to claims 30 and 45, Castelli does not teach determining if the number of elements in the subpicture exceeds the predetermined maximum.

In reply, Castelli teaches determining and storing the spatial coverage of the elements. Thus knowing the spatial coverage of an image element suggests that a predetermined maximum amount of data is known. Additionally, Castelli teaches selecting the set of view elements for compression based on a minimization storage factor, which suggests that when the predetermined maximum amount of data is exceeded the view element data is subject to compression.

Applicant argues, with respect to claims 30 and 45, Castelli discloses identifying overlapping subpictures in a higher level or placing the received element into one or more of the overlapping subpictures.

In reply, Castelli discloses performing repetitive spatial synthesis and frequency decompositions, which creates a correspondence of view elements to elements in the next highest frequency subband using transition data. Thus the identification of corresponding subband data in a vertically adjacent level, is an identification of overlapping subpictures. Additionally, the decompression of the elements to represent the selected view results in the placement of the elements into one or more of the overlapping subpictures.

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Applicant argues Castelli does not teach an extent or a plurality of levels arranged in a stacked relationship as recited in claim 38.

In reply, Castelli teaches an extent in that he teaches storing lattice point data and metadata associated with a view element where a view element is described spatially (col. 5, ll. 5-12). Thus the spatial description suggests that the relative dimensions representing the size and position, of the elements are stored. Additionally, Castelli teaches the levels are arranged hierarchically in a data structure (col. 5, ll. 26-32), which represents a stacked relationship.

Conclusion

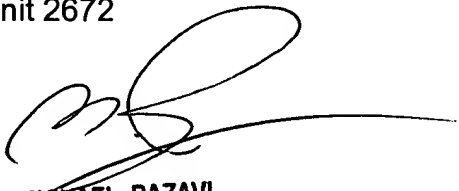
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chante Harrison whose telephone number is 703-305-3937. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 26, 2004

Chante Harrison
Examiner
Art Unit 2672



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